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ABSTRACT

This essay considers the cost of information retrieval by databases and information centers, and explores the need to charge users for the information supplied. The advantages and disadvantages of three means of charging users are discussed: (1) connnect hour charge, (2) print/type charge, and (3) subscription. Also addressed is the practice of marketing magnetic tapes to database users who wish to search the information in-house rather than through online vendors. The paper concludes that database producers should develop coherent pricing policies, and that information be marketed at a price dependent on the cost of providing it. (FM)

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PRICING OF INFORMATION

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PRICING OF INFORMATION

Introduction

Information has long been considered to be of value, although the idea of having to pay a realistic price for it is perhaps newer. Today, decisions on whether or not to buy information are taken, not on whether it is academically of use, but whether it is cost-effective. Because, for example, it costs several millions of pounds to put a new drug on the market, it pays to have a detailed patent search done before research progresses too far.

Most database producers began by publishing abstract journals and or indexes by simple manual manipulation and printing. CAB's first journal began in 1913. During the 1960s and 70s the costs of labour and printing rose dramatically, and at the same time computing became much cheaper. Consequently many producers began producing their journals by computer. During the process magnetic tapes were produced as a by-product and it was soon found that they could be used for retrospective searching. In this situation the user receives the information he wants (hopefully) when he wants it (ie. not monthly) although it is still in a pre-defined format and not necessarily as he requires it. Online retrieval is at present often much more cost-effective than manual searching. A recent EEC report claims that online is heavily subsidized by hardcopy, and this is one reason for the fear that online will take over from printed journals. Should this occur, online costs would rise dramatically.

Online

This same report, "The impact on user charges of the extended use of on-line information services" takes as an example the hypothetical Widget Abstracts and describes a model for predicting the effect of online charging policies, given three variables: (1) the demand for information, (2) the 'take off' point for online usage, (3) the impact of online on the printed subscriptions. The case study concludes that online royalties should increase by a factor of 2-2½ times over the period 1978-83 when compared with hardcopy. They argue that real database producers are likely to follow suit and that rises of this order will stabilise the whole uncertain pricing situation and maintain the viability of hardcopy and online.

If these charges are made too late, the users will suffer because producers will be forced to take drastic decisions to protect their products. Database producers are in business to sell information; they have no bias in favour of online or hardcopy; what they must ensure is that they receive suitable rewards

for their labours to cover their costs, investments and profit.

We have seen then, that there is a general need for increased online charges so that it pays its way in the information world.

We must now consider how the user charge should be levied. There are really three possibilities all of which are used, often all together. The problem, as always, is defining the balance.

(1) connect hour charge
(2) print/type charge
(3) subscription

In considering the first two points, I want to trace the development of CAB pricing policy for online and make suggestions for how connect/hour and print/typer charges should interact - views which are held by a number of other UK producers, including Blaise who began a pricing experiment at about the same time as our own. Like most database producers CAB's online database became available because an online vendor (Lockheed) was prepared to risk money inverting our files and providing the necessary programmes and services in the expectation that customers would want to use the files. Naturally the online vendor felt that CAB should share some of the risk and a typical arrangement was made that we shared income from use of the Lockheed service (hourly charge) and provision of offline prints. No use meant no money for CAB or Lockheed. Many database providers continue to charge for their online services in exactly this way.

I've already outlined the risk the database producer has to face; that online could eventually oust hardcopy. Another risk is that modern technology could enable users to strip information off the online file very rapidly into their own computer. This puts in danger the connect-hour usage and offline prints. All these risks fall into two areas :

(1) cost of information production
(2) cost of " handling
(3) cost of telecommunications

The former, is the information providers field, and the latter the host organisation.

CAB and many other UK database producers believe that each should logically be paid for his own expertise alone and not share both with the host. Consequently Lockheed, or the other host should be paid by connect hour, to cover

them for computer costs etc., and they must sort out the high speed terminal issue; and the database producer be paid for his information, be it transmitted offline or online, at whatever speed by paying per citation. CAB and most other producers are not, and have never been in the business of information transfer, and have no real desire to enter it through online. The hosts, conversely are not database producers, and have no information of their own, so why should they earn money from it ?

Consequently moves began to change the paying structure so as to pay the host for transfer costs (ie. connect hour) and the database for the information (ie. types and prints).

From May 1979 radical changes were made to the costs of CAB ABSTRACTS on Dialog. The online connect charge was reduced from $65 to $35 with all the money retained by Lockheed for system operating expenses. The offline prints for full abstract increased from $0.15 to $0.25 and the same charge introduced for online types. The information is the same, be it online or offline. It was however recognised that users should be free to develop their strategies by looking at hits online, consequently one format allowed users to view titles, index terms and codes free online, but no reference was given to the original document or abstract. It would seem that this is an essential part of any pricing for online.

This form of pricing has the following advantages:

(1) The database producers and hosts receive the bulk of their income for the products for which they are the experts.

(2) Database producers are freed from worries about new high speed printers etc., and the hosts are freed from concern about the effect of online on hardcopy.

(3) Database producers may tend to be conservative in the area of information transfer because of lack of knowledge whereas the host, with his expertise can utilise the advantages to the benefit of users and themselves without adversely affecting the producer.

(4) Users are encouraged to spend longer online developing strategies to get relevant results, rather than searching quick and dirty. Cost and telecommunications still encourage some speed to be cost-effective.

(5) Inexperienced users, and those working with old equipment are not so heavily penalised.

Our experiment has been in force for over 6 months and will continue for another 6. It has been well received by most users and by Lockheed, many UK database producers are considering following suite and BLAISE, of course introduced a similar experiment at about the same time as CAB. The possibility still exists that big users could strip off the data, paying for it of course, but then using it to create their own database, - it has been suggested that if index terms weren't displayable with the full record, this risk would be reduced.

Although it is difficult to draw conclusions from the test period, because so many variables are operating, the following general conclusions seem to be valid.

(1) CAB income during the test period is comparable with that received with the old pricing
Close correlations exist between royalties and usage however measured with both pricing structures

(2) Growth rate has been unaffected by the changes

(3) The average number of prints per user has fallen slightly during the experimental period.

January 1978 - April 1979 average was 138
May 1979 - December 1979 " " 110

The next step for us must be to analyse our results in the EEC model.

We believe then, that the database producer should be paid a reasonable price for his information, the host should be paid for computer usage.

The third approach, practised by Derwent in the UK is to have a subscription based approach. What they have in effect done, is to form a club. For their bibliographic databases, RINGDOC, PESTDOC, VETDOC and CRDS, access is restricted to those who subscribe to hardcopy or services who then pay by standard connect/hour and prints. For their patent database WPI, subscribers pay considerably less online than non-subscribers and have access to far more sophisticated coding. The full subscription of £5000 allows full access to all parts of WPI. No abstracts are available online for technical reasons, but they will be in the foreseeable future. The advantages of this approach include:

(1) it protects the hardcopy

(2) know your users better; follow trends

(3) less affected by budgetary fluctuations, because subscribers pay a major portion at beginning of year

The main disadvantage is that this system discourages browsers, and new users although some may of course become subscribers.

Having personally used Derwent services heavily in previous employment, I suspect that this structure works well for them because their databases are very complex in structure and in their coding; consequently one really needs to be a regular user to search Derwent files effectively. The files themselves discourage browsers but the sophistication encourages heavy usage. Therefore their pay structure is in line and 'totally consistent' with their file structure. Whether this approach would work for other databases, I have my doubts ; because most databases are more readily accessed by browsers.

Magnetic tapes

Most database producers also market their tapes to organisations who wish search the information inhouse, rather than through online vendors. Although the number of commercial companies who do this are few and far between, several countries have set up centres to provide computer searching facilities, either online or batch-mode for their own national use. Indications are that this could become important.

We must not fall into the trap of thinking that online is the final answer for information retrieval. One likely development is the use of minicomputers, searching databases stored on videodisc or floppy disc. This would of course be much cheaper than magnetic tape and might well be suitable for many current online users. For this reason, there is a need to have a coherent pricing structure which also covers the magnetic tape/videodisc situation. Here the information is bought or leased, although not necessarily used; computer costs are irrelevant to the database producer, but money for the information and for preparing the data must be recouped (ie. preparation of magnetic tapes). At CAB, we charge $13,500 for our full tapes, equal to 10c per reference as a minimum, with usage fees bringing this to about c25 for casual users.

In addition we set a minimum royalty to cover the cost of producing the tapes and liaising with customers. In the disc situation this could, of

course be very small. We also offer a substantial usage discount for heavy users.

Conclusion

It is essential for database producers to have coherent pricing policies to enable them to sustain growth irrespective of the form in which the information is supplied.

The pricing structure should not favour any one form, be it online or hardcopy, but should be marketed at a price dependant on the cost of providing the information.